Since there is a finite time between the transmission of a packet from a sending terminal and the receipt at that sending terminal of an acknowledgement corresponding to that packet, the question arises as to what rate packets should be sent from the sending terminal during the time that such terminal is waiting for an acknowledgement. Second, the sending terminal must be programmed regarding how long to wait for such acknowledgment before presuming that the packet has been lost.

Therefore, it is an object of the present invention to provide a communication protocol that avoids overload of a compression buffer.

It is a further object of the present invention to provide a communication protocol that utilizes the transmission bandwidth of the system efficiently.

These and other objects will become more apparent from the description of the invention to follow.

SUMMARY OF THE INVENTION:

The invention disclosed herein provides an improved communication method that maximizes the utilization of transmission bandwidth for wireless devices. A first aspect of the invention analyzes the number of information packets in a communication buffer awaiting compression and controls the number of packets that are sent to that buffer accordingly. A further aspect of the invention employs rules relating to message importance in relation to system

congestion to improve transmission efficiency. The system applies established rules to prioritize messages or files for efficient handling. A final aspect of the invention recognizes that a user of the system may desire to reset the number of information bits for encoding, but the system does not permit such a reset if the intended number is in conflict with efficient wireless processing.

BRIEF DESCRIPTION OF THE DRAWINGS:

Figure 1 is a schematic diagram of a wireless communication system utilizing the present invention.

Figure 2A is a flowchart of a queue control process of the present invention.

Figure 2B is a flowchart of a file handling and compression method of the present invention.

Figure 3 is a flowchart of a discretionary size override process of the present invention.

DETAILED DESCRIPTION OF THE INVENTION:

According to the invention disclosed, Figure 1 illustrates a communication system that utilizes wireless client devices for sending and receiving. Whereas the invention deals with transmission and reception of messages via TCP/IP packets, the sending portion of the system is not portrayed. A plurality of sources, which may be a server, a computer, or other storage facility, referred to below as Internet service providers (ISPs) 10a, 10b, and 10c are adapted for

transmitting voice and data messages to a processing hub 12 where a computer or server (not shown) coordinates packet receipt and deployment. Hub 12 is configured with a plurality of RAM segments that act as buffers to hold data in queue for processing. A primary function of hub 12 is to act as a buffer to hold packets that it receives and then pass the packets to compression engine 14, which employs an algorithm to compress the data in the communication portion of each packet without disturbing the identification in the packet header. As is known to those skilled in the art, a compression operation involves a certain amount of time that varies according to the algorithm employed and according to the amount of data being compressed.

At the completion of the compression step, hub 12 and compression engine 14 send the packet on to network 16, for example the Internet. All through this process, the packet header maintains information for sorting the individual packets and assembling and transmitting the entire message to the intended receiving client device 18a – 18e. Thus, a message originating from a source, e.g. ISPs 10a – 10c, is delivered to the predetermined one of clients 18a – 18e for which the message is intended. The transmission from network 16 to clients 18a – 18e may be either by optical fiber, electric hardwired or wireless means.

Referring now to Figure 2A, a pair of parallel flowcharts representing substantially simultaneous processing is illustrated. Process initiation occurs at